


# Therapy XT

User Manual

Therapy XT is manufactured using highest technology, and every piece of equipment is tested individually. It also complies with requirements of RDC 59 (ANVISA).

 This product must be used by physician, dentists, physiotherapists and beauticians.

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## **EQUIPMENT FUNCTIONS**

Following function is featured by Therapy XT:

- Low powered (100 mW) infrared and red laser light used in laser therapy.

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## **APPLICATIONS**

The applicatios are inside the following areas: Medicine in general, dentistry, physical therapy and esthetics. Bellow following some examples:

### **DENTISTRY**

#### **Soft Tissue Repair (Red Laser):**

- Aphthae and Traumatic Ulcers;
- Systemic Diseases with Buccal Manifestation;
- Lichen Planus;
- Lúpus Erythematosus;
- Pemphigus Vulgaris;
- Hyperplastic Gingivitis (Diabetic);
- Angular Cheilitis;
- Gengivitis;
- Post-Surgicals;
- TMJ Dysfunction.

#### **Osseous Tissue Repair (Infrared Laser):**

- Orthodontics;
- Implantology;
- Periodontics;
- Extractions;
- Traumatology;
- Osseous Biostimulation.

**Dental Tissue Repair (Red and Infrared Laser):**

- Post-Cavity Preparation Hypersensitivity;
- Post-Scaling Hypersensitivity;
- Amelogenesis Imperfecta;
- Dentin Hypersensitivity.

**Nervous Repair (Infrared Laser):**

- Neuralgia;
- Paresthesia;
- Paralysis;
- Pain Syndrome.

**Other Applications (Red and Infrared Laser):**

- Alveolitis;
- Edema;
- Xerostomy;
- Pericoronitis;
- Anesthesia;
- Benign Migratory Glossitis;
- Herpes Simplex;
- Herpes Zoster.

**MEDICINE IN GENERAL****Chronic Injuries (Red Laser):**

- Lower Limb Ulcers;
- Venous Ulcers;
- Arterial Ulcers;
- Diabetic Ulcers;
- Cutaneous Ulcers of Different Etiologies;
- Venous Stasis Ulcer;
- Skin Sores;

**Chronic Sores (Infrared and Red Laser):**

- Decubitus Ulcers.

**Fractures (Red Laser):**

- Left Femur Fracture and Middle Third Closed Fracture;

- Faster Consolidation of Fractured Bone.

**Regeneration (Red Laser):**

- Cartilage and Bone Regeneration;
- Increase of White Blood Cells and Leukocytes in Human Blood.

**Inflammation (Red Laser):**

- Pulmonary Inflammation.

**Inflammation (Red and Infrared Laser):**

- Acute Inflammation;
- Acute and Carrageenan Inflammation.

**Others (Red Laser):**

- Vascular Microcurrent Diabetes;
- Post-surgery.

**Others (Infrared Laser):**

- Sjögren's Syndrome.

**PHYSICAL THERAPY****Physical Therapy (Red Laser):**

- Contact Dermatitis;
- Burns;
- Pressure Ulcer;
- Diabetic Ulcer;
- Varicose Ulcer.

**Physical Therapy (Infrared Laser):**

- Hand Articulation;
- Arthritis;
- Rheumatoid Arthritis;
- Biomodulation;
- Neck Pain;
- DMED Pain;
- Inflammatory Processes;
- Epicondylitis;

- Fasciitis Plantar;
- Fibromyalgia;
- Gonarthrosis;
- Rotator Cuff Injury;
- Muscle Injuries;
- Cartilage Injuries;
- Peripheral Nerve Injuries;
- Low Back Pain;
- Osteoarthritis;
- Facial Paralysis;
- Paresthesias;
- Post-Surgery;
- Nerve Repair;
- Carpal Tunnel Syndrome;
- Myofascial Pain Syndrome;
- Calcaneal Tendinitis;
- Patellar Tendinitis;
- Tendinopathies.

## ESTHETICS

### Red Laser:

- Stimulates collagen synthesis, enabling treatment of expression marks;
- Analgesic and anti-inflammatory action in the treatment of acne;
- Bactericidal effect on microorganisms that contain porphyrins in their cytoplasm;
- Stimulates soft tissue healing (epidermal, dermal and hypodermal) in post-surgical operations;
- Stimulates healing of physical and chemical burns;
- Combats free radicals in anti-aging treatment, also known as ILIB technique

### Infrared Laser:

- Stimulation of lymph nodes with general optimization of lymphatic drainage (acne, post surgery operation, gynoid lipodystrophy, etc)
- Stimulates collagen synthesis, enabling treatment of expression marks
- Analgesic and anti-inflammatory action;
- Stimulates the immune system;
- Biostimulation in the healing of deep tissues (bone, cartilage and nervous tissue).

## CONTRAINDICATIONS

- History of photosensitivity;
- Skin cancer;
- Personal history of skin cancer;
- Pregnancy;
- Glaucoma;
- Cataract and visual disorders.

## CLASSIFICATION

Standard	Classification
RDC 185/2001 (ANVISA)	III
IEC 60825-1	3R

## SPECIFICATIONS

### Laser Therapy Function

Infrared Laser	Characteristics
Wavelength	808 nm $\pm$ 10nm
Useful power of source	100 mW $\pm$ 20%

Red Laser	Characteristics
Wavelength	650 nm $\pm$ 10nm
Useful power of source	100 mW $\pm$ 20%

### General Characteristics

Characteristics	Specifications
Supply voltage	90-240V~
Type of Current	AC current
Input power	10 VA
Supply frequency	50/60Hz
Watertight protection	IPX0
Operating mode	Continuous operation

Handpiece Dimensions	21cm (A) x 3cm (L) x 5cm (P)
Handpiece stand dimensions	11cm (A) x 6cm (L) x 19cm (P)
Handpiece weight	0,180 Kg
Handpiece stand weight	0,117 Kg
Fiber diameter	600µm
Time of battery independence	2 hours of uninterrupted application
Battery	Li-íon
	3,7 V

### SAFETY - IMPORTANT PRECAUTIONS

⚠ The laser light is harmful for the eyes. Therefore, all people present at the moment and place of session must protect the eyes with protection goggles.

⚠ The surface to be radiated must be clean, dry and moisturized.

⚠ The angle of incidence of the beam must be as perpendicular as possible to reduce spreading of the beam on the tissue.

⚠ Never look directly to the laser light, and particularly never focus the laser light directly to any person, except for the patient being treated.

⚠ Reflexive surfaces may reflect the laser beam to the eyes.

⚠ Never directly irradiate tumor processes, since the laser may stimulate these.

⚠ Never directly irradiate infectious processes, since the laser may aggravate them.

⚠ Never irradiate any lesion without previous diagnosis.

⚠ Never perform extra oral applications in patients who use photosensitive drugs. Any high intensity light may interact with such drugs, provoking staining in the part of skin that suffered irradiation.

⚠ Never irradiate the beam on pregnant women under three-month pregnancy.

⚠ Only physician, dentists, physiotherapists and beauticians may operate the equipment. The improper use may cause irreversible damages.

⚠ Never obstruct the air outlets of the equipment.

⚠ Only the components mentioned in this manual may be used together with the equipment.

### EQUIPMENT SAFETY ITEMS

Following are some of the safety items included in the equipment:

- Sound sign to indicate the laser is active;
- Laser sight beam emission.

#### Laser sight beam

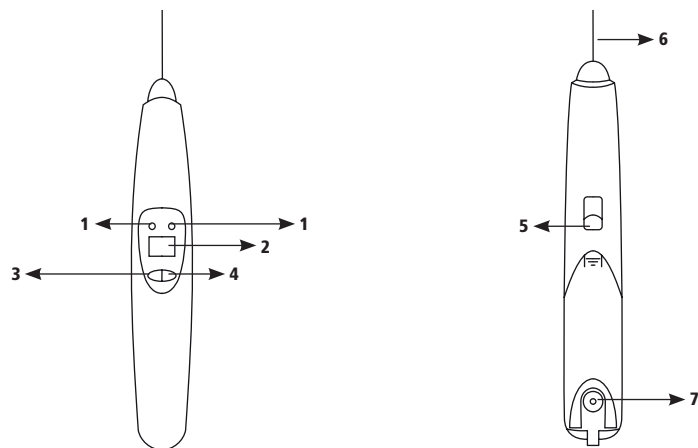
Therapy XT equipment uses a low intensity laser sight beam. This laser is visible and indicates the point of impact of laser infrared. When operating the equipment, the beam remains on for 500ms before the infrared laser. This action is used in order for the operator to have time to correctly position the work beam.

Since the laser sight beam uses the same supply system as the infrared laser, this is a good method to verify the integrity of supply system. In case sight focus is not present at the distal end of supply system, or if its intensity is reduced or seems to be diffuse, this may indicate damages or inadequate operation of guidance system.

### COMPONENT LIST

- 01 Handpiece
- 03 green goggles (02 for esthetics);
- 01 blue goggles (only for esthetics);
- 01 Handpiece stand;
- 01 Power Supply;
- 01 User manual;
- 01 warranty;
- 01 DVD;
- 01 wristband for modified ILIB technique (transcutaneous) – (only for esthetics);
- 01 spacer;
- Transportation case.

## EQUIPMENT PARAMETERS



### Item 1: LEDs to indicate the selected beam:

- Red Led: Active red laser;
- Green Led: Active Infrared laser;
- Leds Flashing: Battery in charge.

### Item 2: Display that illustrates the following indications:

- Indication of the selected dose in J. The dose applied will be the relationship between power (100 mW) x time (seconds), resulting in 1J applied every 10 seconds.
- Indication of time of application in seconds;
- Indication for user to charge battery (Cb);
- Indication of full battery (CC).

### Item 3: Left Button:

- By selecting this button, the user can select the desired laser. The selection will be indicated through the LEDs located above (Item 1).

### Item 4: Right Button:

- Through this button, the user can select the desired dosage in J. This dosage will be shown on the display (Item 2);
- Restart the time of application.

### Item 5: Power Button:

- This button must be used to turn on and off the laser.

### Item 6: Optic fiber for application:

- The optic fiber will conduct the laser to the desired site.

⚠ The optic fiber used in the odontological, medical and physiotherapeutic area has a length of 7 cm and the one used for esthetics has a length of 1 cm.

### Item 7: Power source connector:

- To charge the battery, the user must connect the power source to the electric network and at the site illustrated above.

### Notes

⚠ By selecting both buttons simultaneously, items 3 and 4 illustrated above, the display will show the battery level through the letter "b" followed by a number from 1 to 9, where 1 indicates low battery and 9 indicates full battery.

## ITEMS THAT ACCOMPANY THE PRODUCT

### Handpiece Stand

The support provided with the equipment has the function of supporting the hand piece and base for charging the battery.

### Power Supply

The power source can be coupled directly to the hand piece or on the support. This source operates with voltages of 90-240V~.

### Fibra óptica

The equipment uses 0.6 millimeter diameter optical probes, directly attached to the handpiece. These optical fibers are placed inside a tube made of stainless steel and are NOT removable.

### Safety Goggles

The safety goggles sent with the equipment must be used whenever the laser is activated.

## INSTALATION

- Connect the power source to the hand piece, or support in case the hand piece is on it, in order to charge the battery.
- Connect the power source to the electric network.

⚠ The recharge of the battery must be executed within a period of 2 to 3 hours.

## USE INSTRUCTIONS

In order to select the laser, the user must press the left button and observe the LED that is on:

- **Red:** Active red laser;
- **Green:** Active infrared laser;

Afterwards, the dose can be selected (energy or quantity of light deposited on the target tissue). This must be executed using the right button. The dosages are clearly indicated on the display.

Through the power button, the equipment can be switched on or off at any time. The application duration is automatically calculated by the processor of the device based on the total dosage to be applied on the target tissue. This period is shown on the display with a countdown.

During the application of the laser, the power button may be pressed, interrupting the application and the countdown. The restart of the application time can be performed using the right button, or the application can be restarted with the remaining time using the activation key of the laser.

⚠ The exhibition of the message "Cb" on the display indicates that the battery is low and needs to be recharged. This task can be performed with the hand piece on the support and the power cable connected to the support, or with the cable connected directly to the hand piece.

## CLEANING PROCESS OF EQUIPMENT

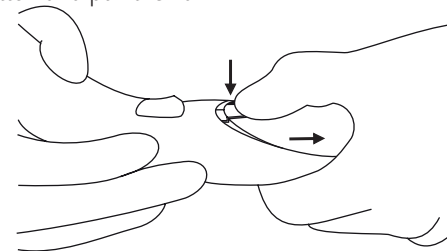
- Equipment must be disconnected from electricity before cleaning, in order to avoid exposure of user to electric shocks.
- Use a soft cloth dampened in antiseptic solution, leaving the liquid on the surface to be cleaned for the period of time recommended by manufacturer. After this period of time, use another cloth dampened in water and then a dry cloth.

⚠ The hand piece is NOT AUTOCLAVABLE. In case it is exposed to the said process, the entire kit, including the laser emitter, will suffer permanent damages.

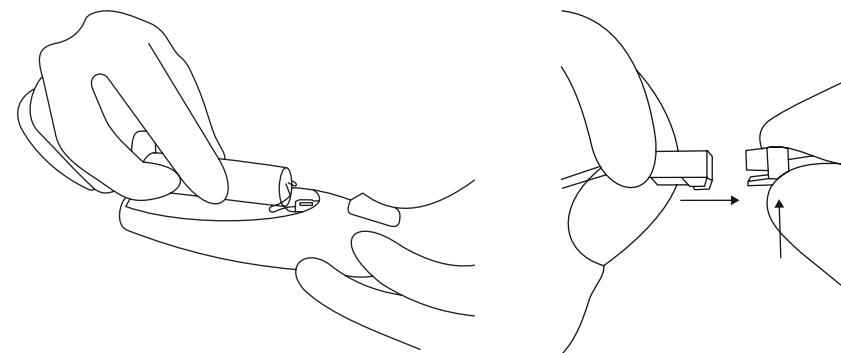
## CHANGE OF BATTERY

After the useful life of the battery, it must be replaced. To replace it, the user must follow the following steps:

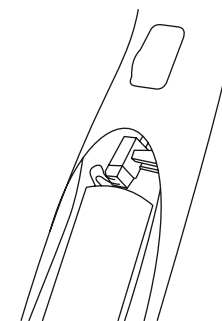
- 1) Press the battery button and pull the lid:



- 2) Remove the battery and disconnect it by pressing and pulling the connector:



- 3) Connect the new battery, position the connector according to the figure below and insert the battery:



 New batteries must be purchased only at DMC Equipamentos.

## PREVENTIVE MAINTENANCE

Laser output must be calibrated at least once each two years by manufacturer. If such maintenance is not performed, the manufacturer will not be liable for problems with equipment safety.

All maintenance services, such as changes, repairs, adjustments, etc. may only be performed by the manufacturer. The manufacturer does not provide unqualified persons with the circuit schemes, lists of components, descriptions, and calibration and gauging instructions.

If maintenance or other type of maintenance service is performed by non-authorized technical personnel, the manufacturer will not be liable for any problems with equipment safety.

 Never open the control box. In case of problems call DMC Equipments technical support.

## ARMAZENAMENTO E TRANSPORTE

- Store the equipment away from dust, solar direct light, and from chemical products and cleaning agents.
- Equipment must be stored, transported and used according to following environmental conditions:
  - Temperature: +10°C to +40°C;
  - Humidity: 30 % to 75 %;
  - Atmospheric Pressure: 700 hPa to 1060 hPa.

 The equipment may not be dropped.

 Maintain equipment in a safe place, avoiding striking or vibrations.

## DISPOSAL

After the useful life of the product and its accessories, it may cause environmental contamination or may not be used properly. In order to reduce these risks, the customer must dispose of the equipment as established by the local legislation.

## TROUBLESHOOTING

Type of Error	Possible Solutions
The equipment doesn't work	Charge or change the battery. If after these measures the equipment still has problems, send to the technical assistance of the manufacturer.
The equipment does not stay on with the battery for the recommended time	Change the battery. If after this measure the equipment still has problems, send to the technical assistance of the manufacturer.
There is no emission of laser light	Contact manufacturer;

## USED SYMBOLS



Type B - Class 1



Caution! Consult accompanying documents



No protection



Date of Manufacture



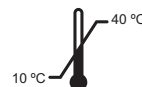
Made by



Alternating current



Serial number



Temperature Limitation



Fragile



This way up





Keep away from sunlight



Protect from radioactive sources



Keep away from rain



Do not roll

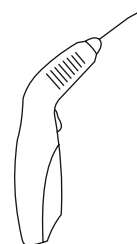


Stacking limit by 4

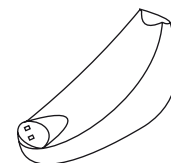
## WARRANTY

- A.** All equipment marketed by DMC are guaranteed to operate according to specifications for twenty four (24) months after the date of purchase.
- B.** DMC warrants all equipment to be free from defects in material and workmanship. Warranty does NOT cover shipping expenses.
- C.** The warranty is voided in case of electrical misuse; tampering; improper use; or unauthorized applications not specifically recommended by DMC.
- D.** If returned equipment is not covered by warranty, the same will be extended only to the parts replaced during the repair service
- E.** The most common defects are caused by physical shocks applied to the equipment, in which case the warranty is cancelled.
- F.** DMC will not be liable for material or personal damages resulting from improper or unauthorized use of the equipment.
- G.** DMC liability regarding the use of DMC equipment and the results of this use is limited to the value of such equipment.

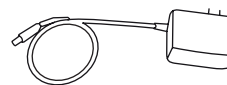
## CHECK LIST



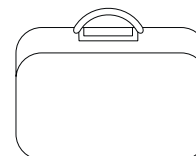
Handpiece



Handpiece Stand



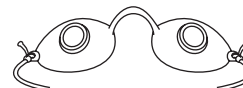
Power Supply



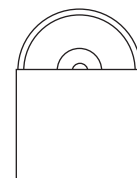
Transportation Case



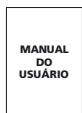
03 green goggles (02 for esthetics)



01 blue goggles (only for esthetics)



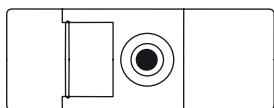
DVD



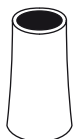
User manual



Warranty



Wristband for modified ILIB technique (transcutaneous) –  
(only for esthetics)



Spacer



Manufactured by:  
DMC EQUIPAMENTOS LTDA  
Rua Sebastião de Moraes, 831 - Jardim Alvorada  
São Carlos/SP - Brazil - CEP 13562-030  
CNPJ 02.827.605/0001-86

ANVISA Registration Number - 80030810100  
Technical Expert: Renaldo Massini Jr. CREA 0601706815  
Technical Name: Laser Equipment for Dental Treatment

Technical Assistance:  
DMC EQUIPAMENTOS LTDA  
Phone: 55 (16) 2107-2323 - Fax 55 (16) 2107-2320